

What is claimed is:

1. A light scanning unit comprising:

a composite light source in which a plurality of light sources for emitting coherent light having different wavelengths are arranged adjacent to one another and an optical axis of each light source is arranged almost parallel and which emits light at a divergence angle centering on each optical axis; and

an optical system comprising a collimator lens which is arranged on an approximately central axis of an optical axis of each light source constituting the composite light source and collimates the light beam emitted from the composite light source, a cylinder lens for condensing the light beam emitted from the collimator lens, a polygonal rotating mirror for scanning the light beam condensed by the cylinder lens in a main scanning direction on an exposed surface of an exposed object, an optical element, which splits light beams with respect to different wavelengths after being reflected on the polygonal rotating mirror so as to radiate a light beam in the main scanning direction on the exposed surface of the exposed object different in each coherent light having each wavelength using the polygonal rotating mirror, and an $F-\theta$ lens arranged on a light path between the optical element and the polygonal rotating mirror, and

wherein, in an optical path length from a reflective surface of the polygonal rotating mirror to the exposed surface of the exposed object, an optical path length of a light beam having a short wavelength is different from an optical path length of a light beam having a long wavelength.

2. The light scanning unit of claim 1, wherein the optical element includes:

a half mirror, which splits a light beam emitted from the composite light source;
and

a band pass filter, which transmits only a light beam having a predetermined wavelength of each of the light beams split by the half mirror.

3. The light scanning unit of claim 1, wherein, in the optical path length from the reflective surface of the polygonal rotating mirror to the exposed surface of the exposed object, the optical path length of the light beam having a short wavelength is larger than the optical path length of the light beam having a long wavelength.

4. The light scanning unit of claim 1, wherein the optical element includes:

a half mirror, which splits a light beam emitted from the composite light source;
and

a band pass filter, which transmits only a light beam having a predetermined wavelength of each of the light beams split by the half mirror.